WHAT IS CLAIMED IS:

1. A vaporizer which vaporizes a liquid material under a depressurized atmosphere, the vaporizer comprising:

a liquid storing chamber temporarily storing the liquid material therein;

a vaporizing chamber set in the depressurized atmosphere;

a small aperture connecting between the liquid storing chamber and the vaporizing chamber so as to supply the liquid material to the vaporizing chamber;

a valve body which opens and closes an inlet port of the liquid storing chamber; and

an actuator controlling a degree of opening of the valve body.

2. The vaporizer as claimed in claim 1, further comprising carrier gas introducing means for introducing a carrier gas into the vaporizing chamber.

3. The vaporizer as claimed in claim 2, wherein the carrier gas introducing means injects the carrier gas in the vicinity of an outlet port of the small aperture.

4. The vaporizer as claimed in claim 3, wherein the carrier gas introducing means includes an injecting port positioned in the vicinity of the outlet port of the small aperture so as to inject the carrier gas from a surrounding area of the outlet port in a direction substantially perpendicular to a direction of discharge of the liquid material from the small aperture.

5. The vaporizer as claimed in claim 3, wherein the carrier gas introducing means includes an injecting port positioned in the vicinity of the outlet port of the small aperture so as to inject the carrier gas in a direction substantially opposite to a direction of discharge of the liquid material from the small aperture.

6. The vaporizer as claimed in claim 1, wherein the valve body is formed by one of a diaphragm and a bellows.

7. The vaporizer as claimed in claim 1, wherein the vaporizing chamber is has a conical shape so that a cross section of the vaporizing chamber increases as a distance from the small aperture increases.

8. The vaporizer as claimed in claim 1, wherein a direction of discharge of the liquid material from an outlet port of the small aperture coincides with a direction of an exit of the vaporizing chamber.

9. The vaporizer as claimed in claim 1, further comprising a heater provided in a periphery of the vaporizing chamber and a temperature sensor detecting a temperature of the periphery of the vaporizing chamber.

10. The vaporizer as claimed in claim 1, further comprising a heater provided near the liquid storing chamber for heating the liquid material in the liquid storing chamber and a temperature sensor positioned in the vicinity of an outlet port of the small aperture.

11. The vaporizer as claimed in claim 1, wherein the liquid material includes a metal complex used for depositing a film in a process apparatus.

12. A semiconductor manufacturing system comprising:

a process apparatus performing a process using a vaporized material; and

a vaporizer which vaporizes a liquid material under a depressurized atmosphere so as to generate the vaporized material, the vaporizer comprising:

a liquid storing chamber temporarily storing the liquid material therein;

a vaporizing chamber set in a depressurized atmosphere;

a small aperture connecting between the liquid storing chamber and the vaporizing chamber so as to supply the liquid material to the vaporizing chamber;

a valve body which opens and closes an inlet port of the liquid storing chamber; and

an actuator controlling a degree of opening of the valve body.